

Broadcaster's Clinic

SBE National Convention

IBOC Injection

-20dB

-10dB

OR

Something in between

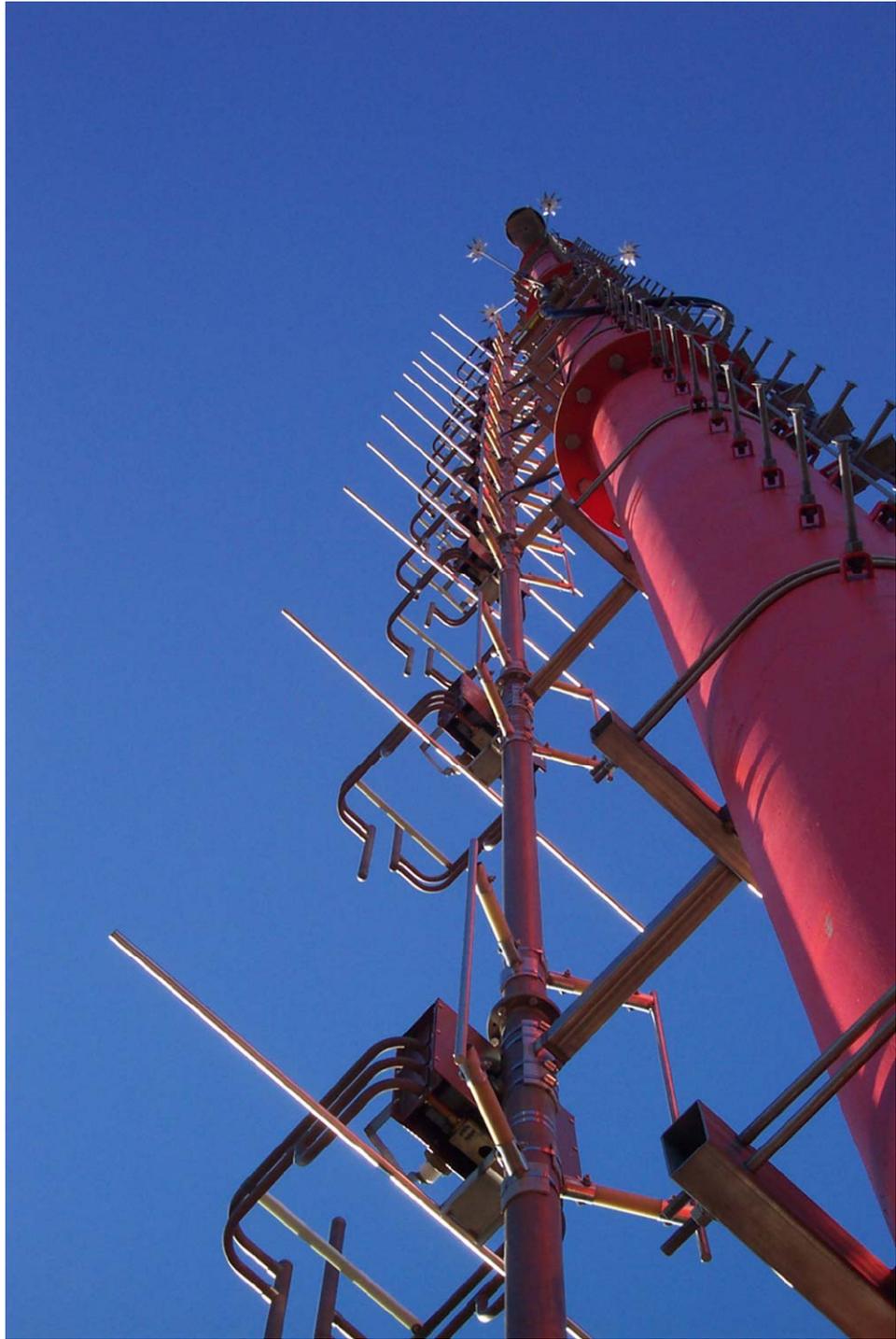
Bob Surette

Director Sales Engineering

October 14, 2008

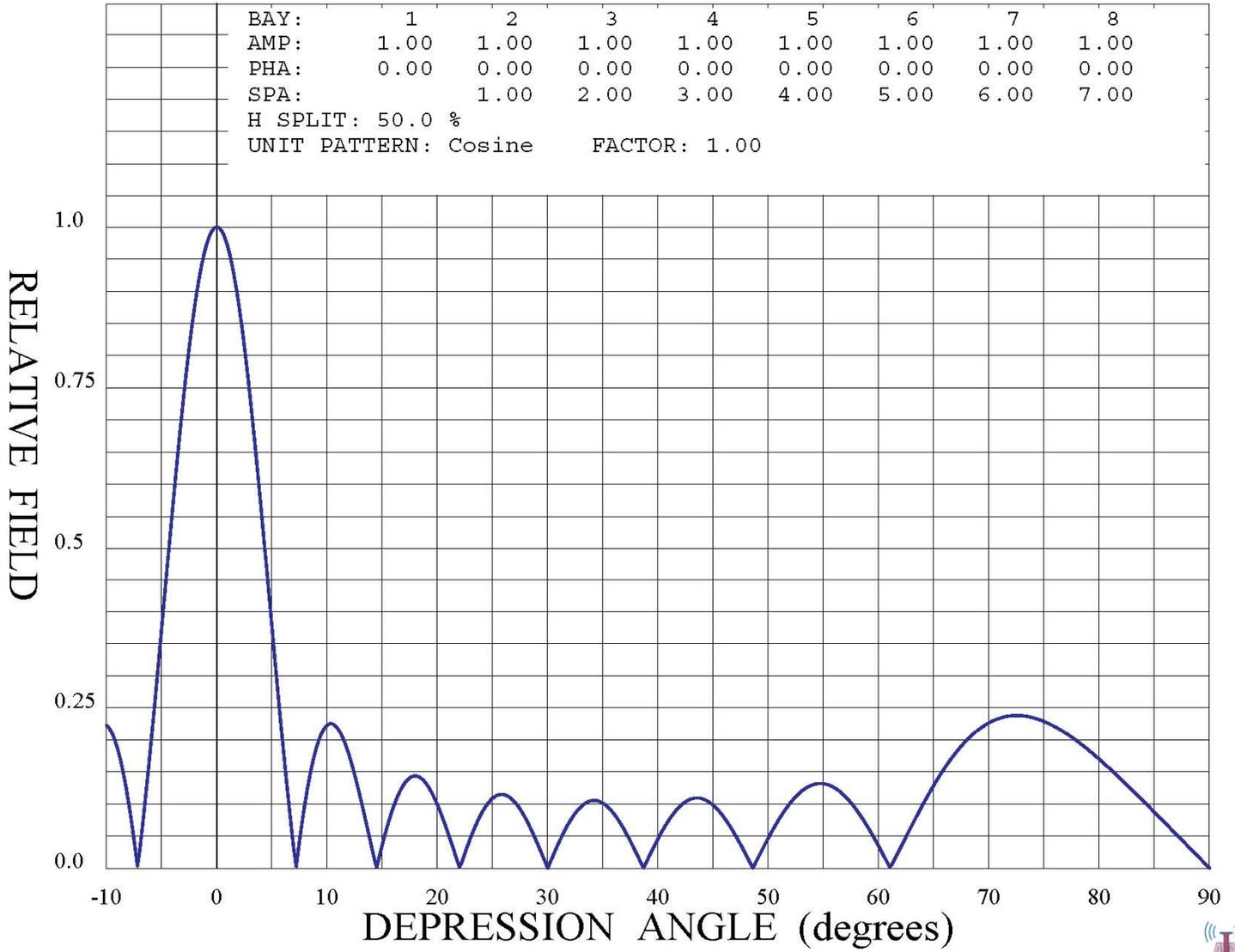






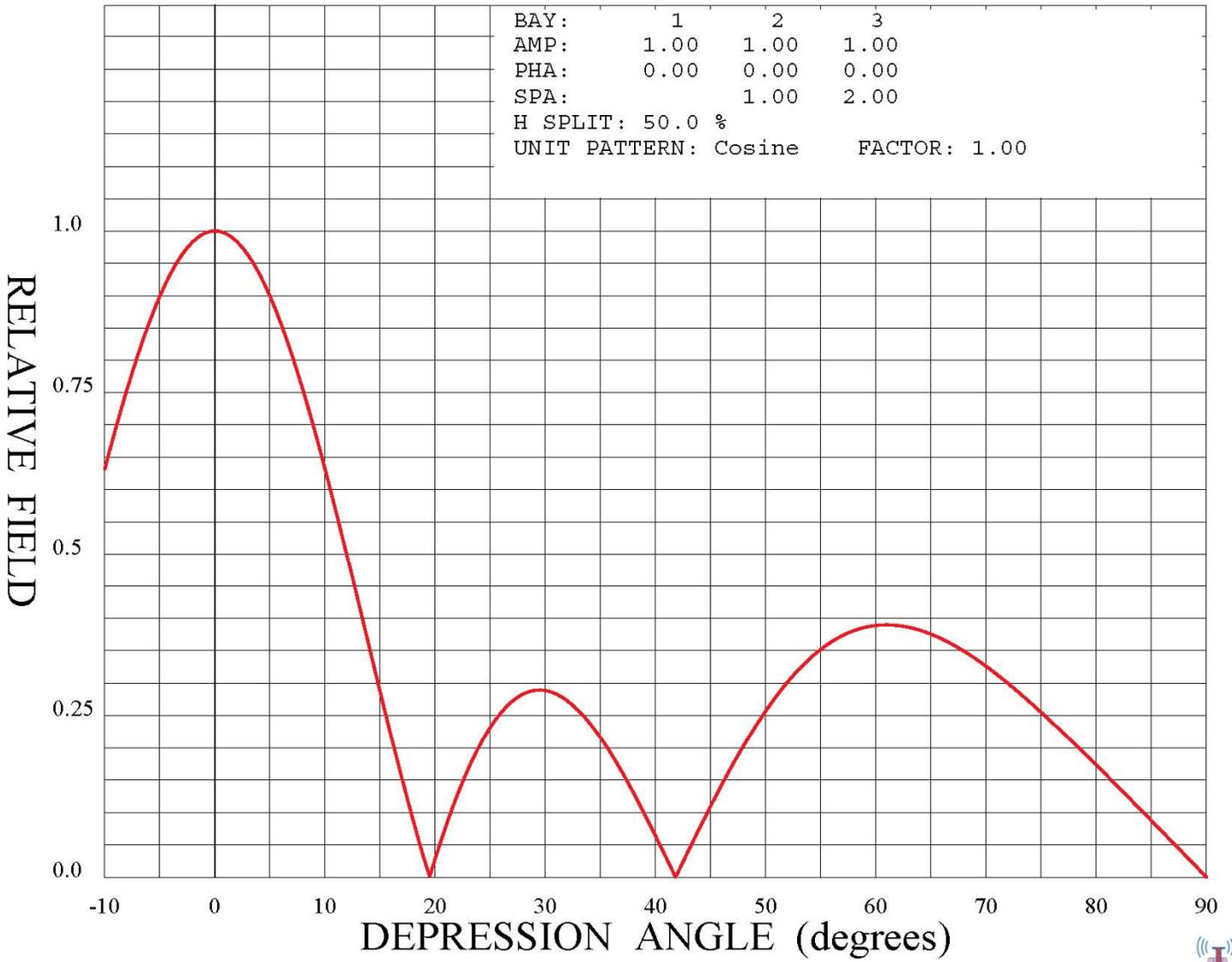
8 - BAY FM ELEVATION PATTERN
Shively Presentation
NAB Convention 2007

Mullaney Engineering, Inc.
Gaithersburg, Maryland
FIGURE 2
April 2007



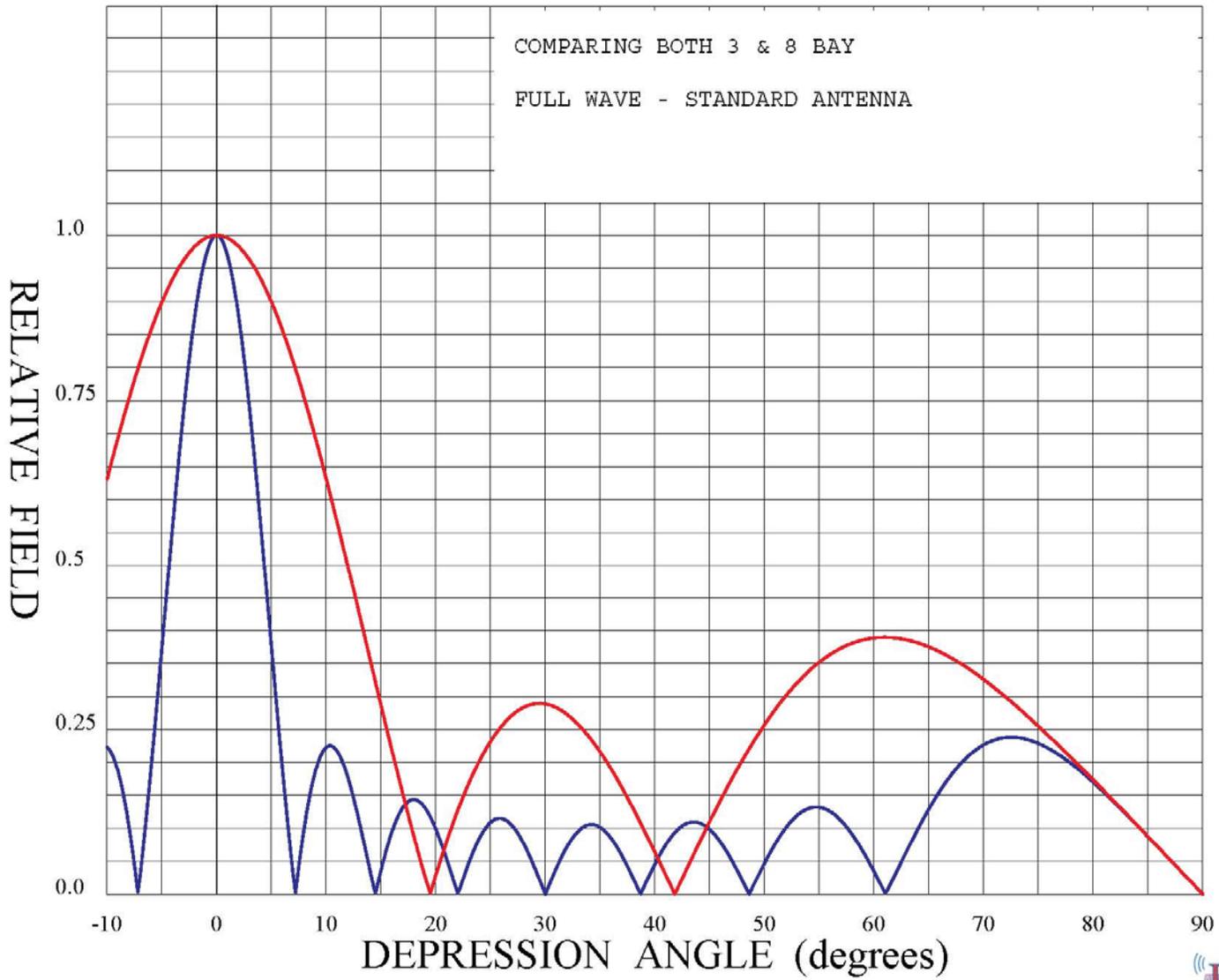
3 - BAY FM ELEVATION PATTERN
Shively Presentation
NAB Convention 2007

Mullaney Engineering, Inc.
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FIGURE 1
April 2007



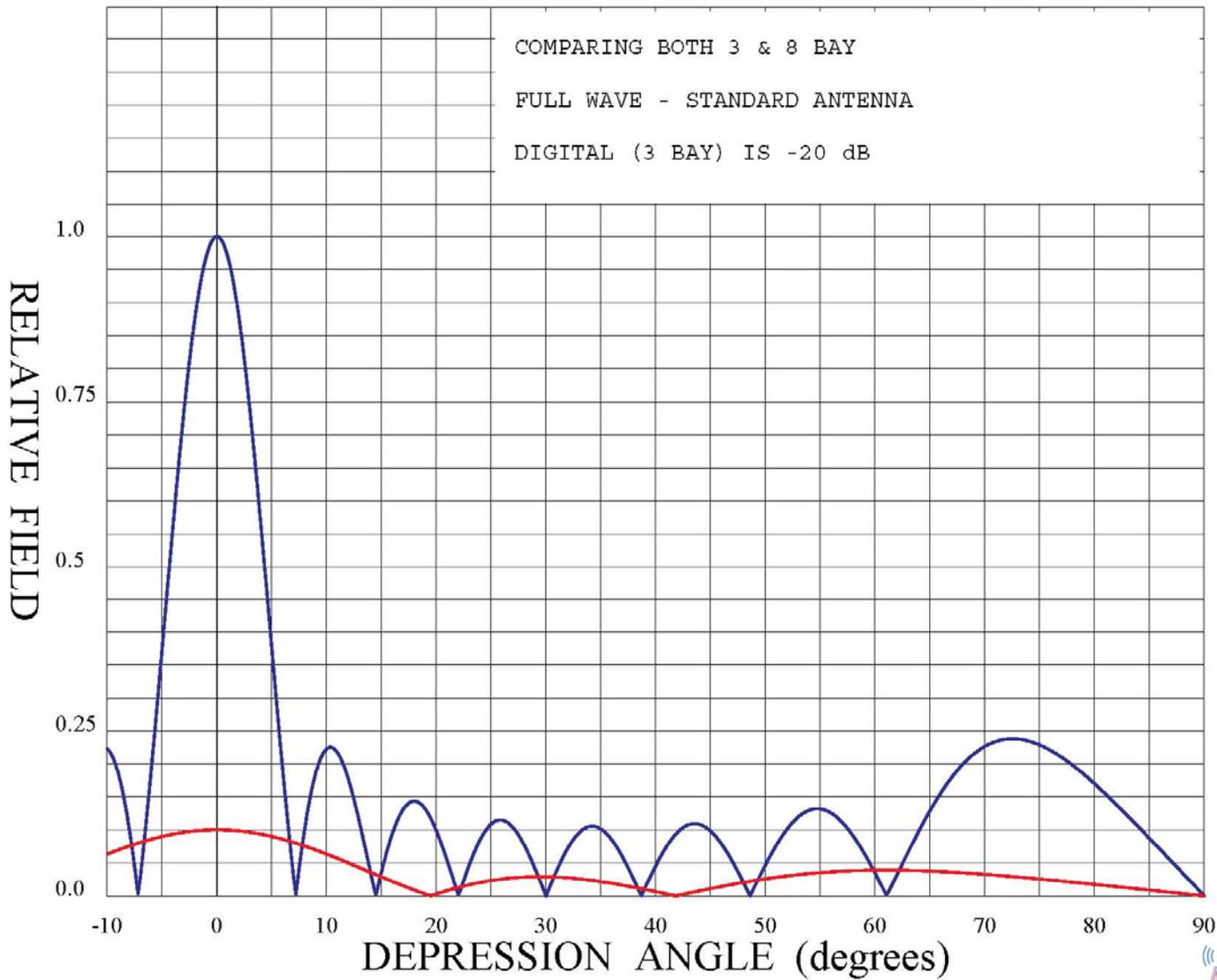
3 & 8 BAY FM ELEVATION PATTERN
Shively Presentation
NAB Convention 2007

Mullaney Engineering, Inc.
Gaithersburg, Maryland
FIGURE 3
April 2007



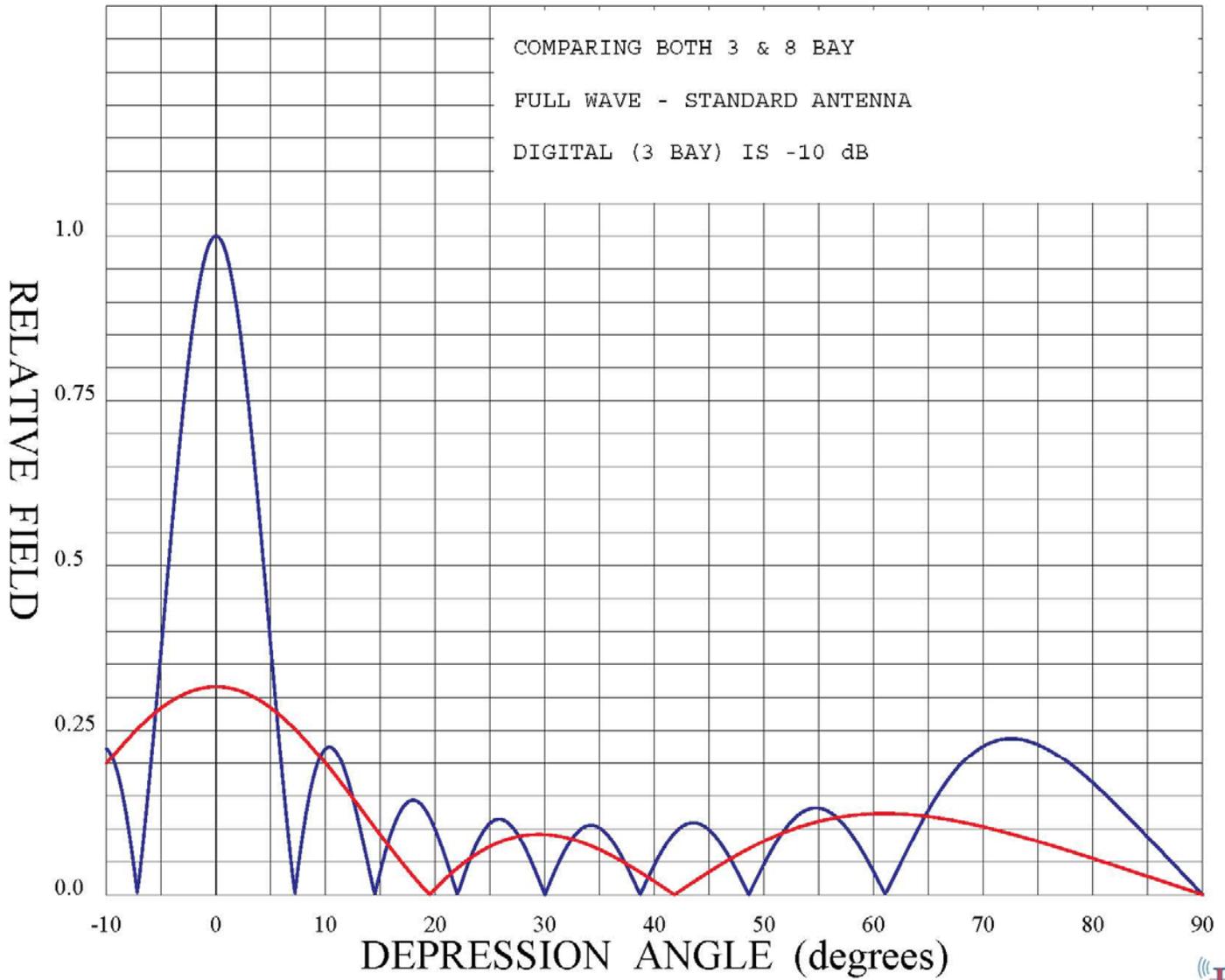
3 & 8 BAY FM ELEVATION PATTERN
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FIGURE 4
April 2007



3 & 8 BAY FM ELEVATION PATTERN
Shively Presentation
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Gaithersburg, Maryland
FIGURE 5
April 2007







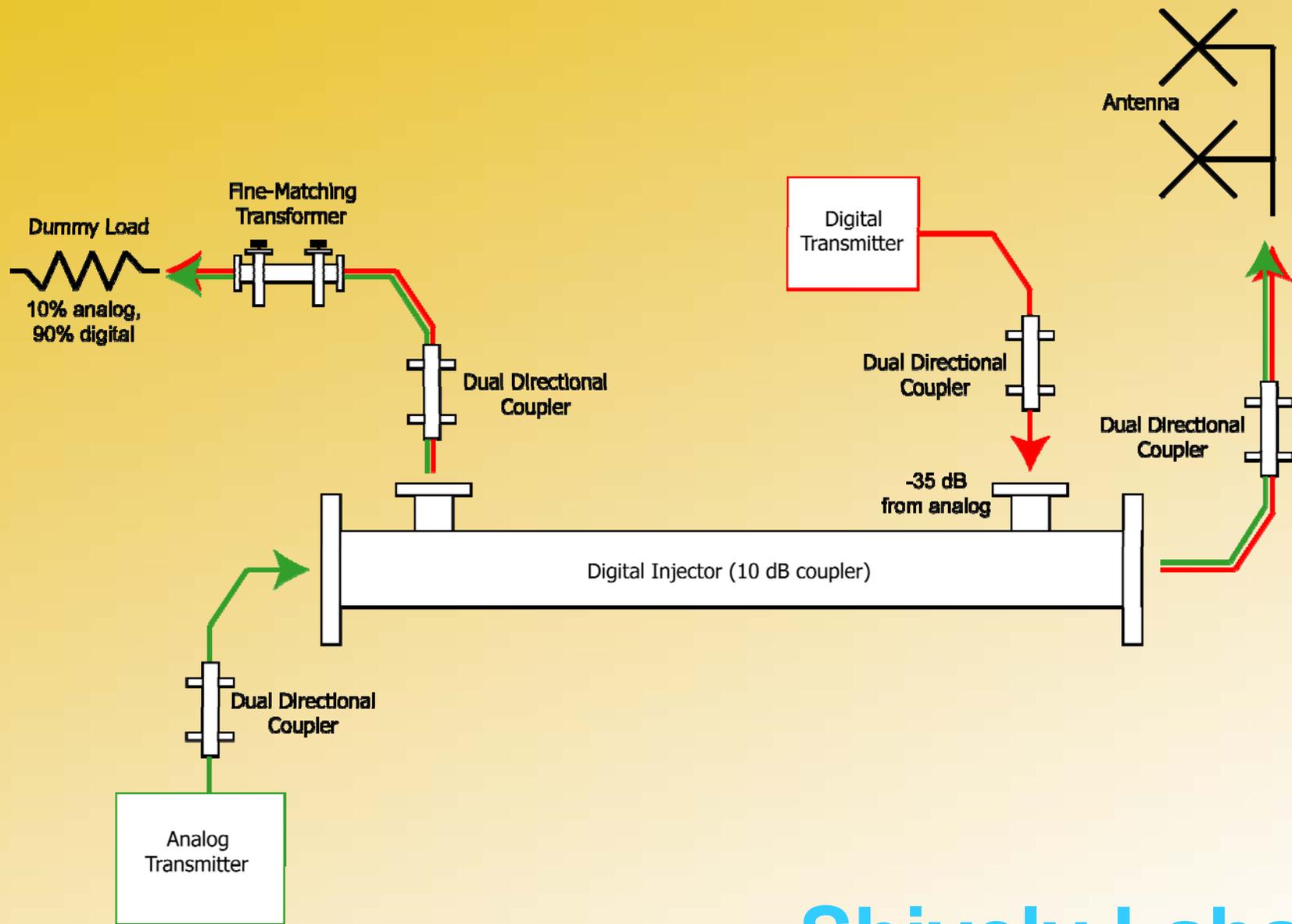
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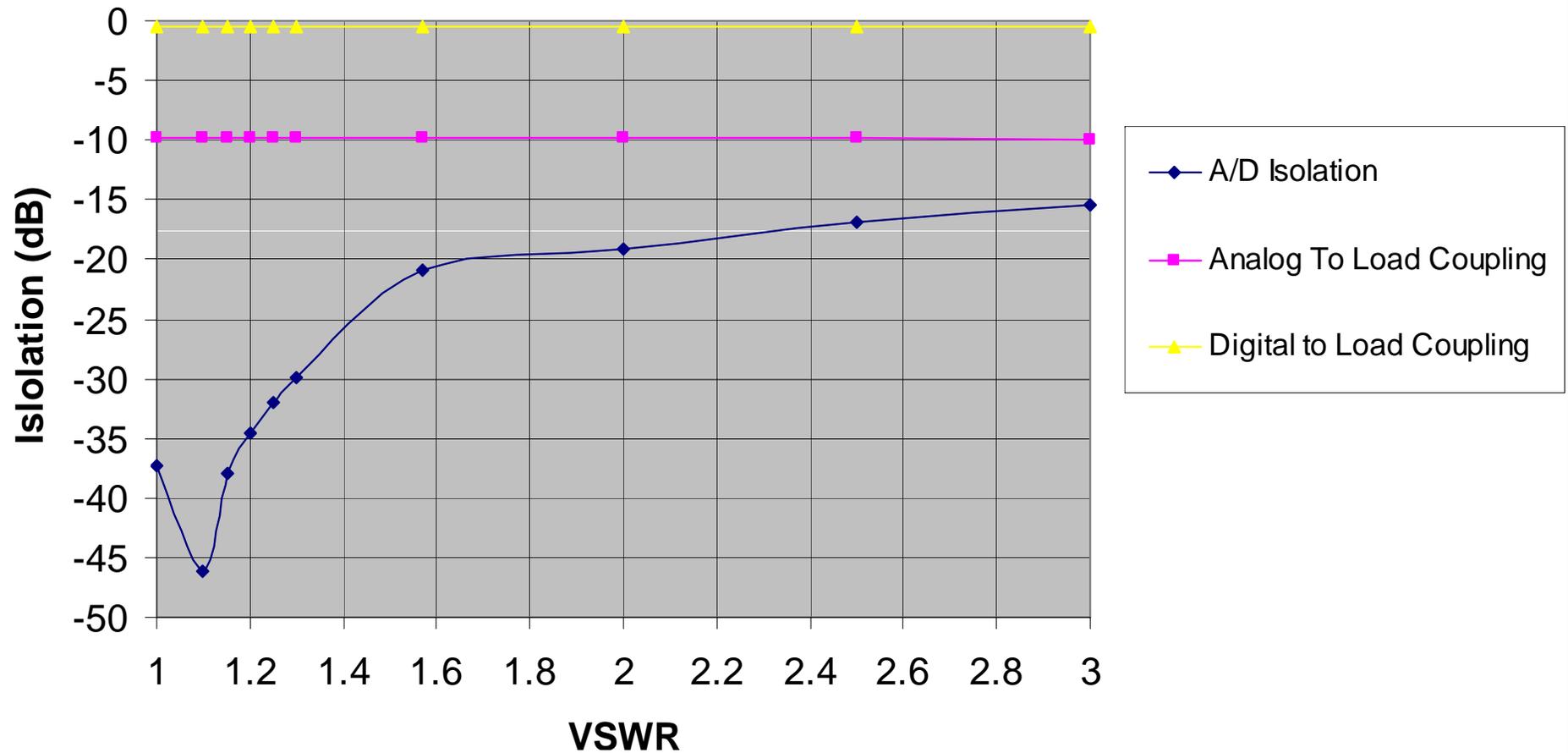




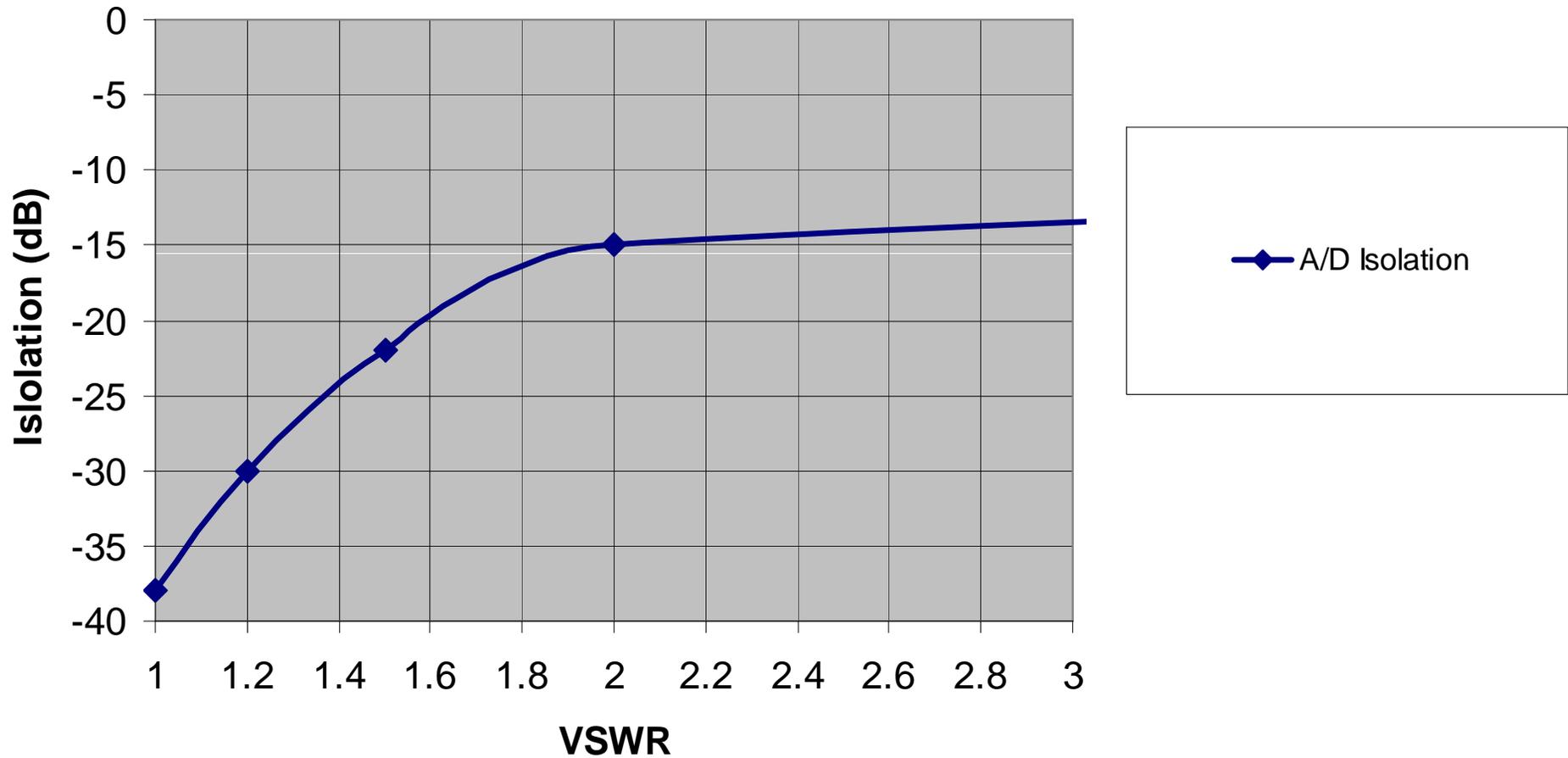


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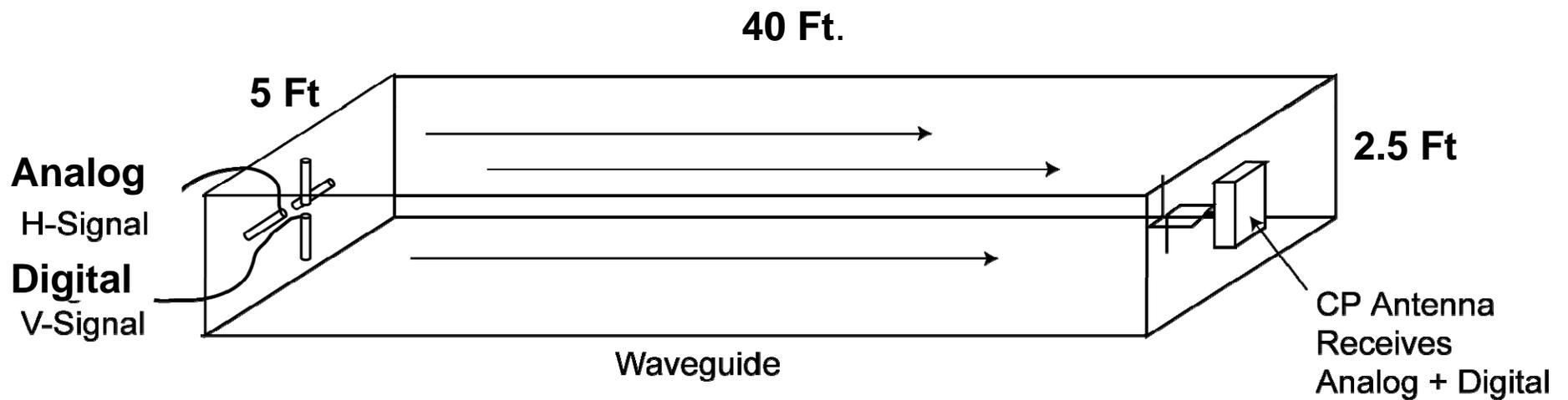
The Effect of Changing Load Impedance on Analog to Digital Isolation



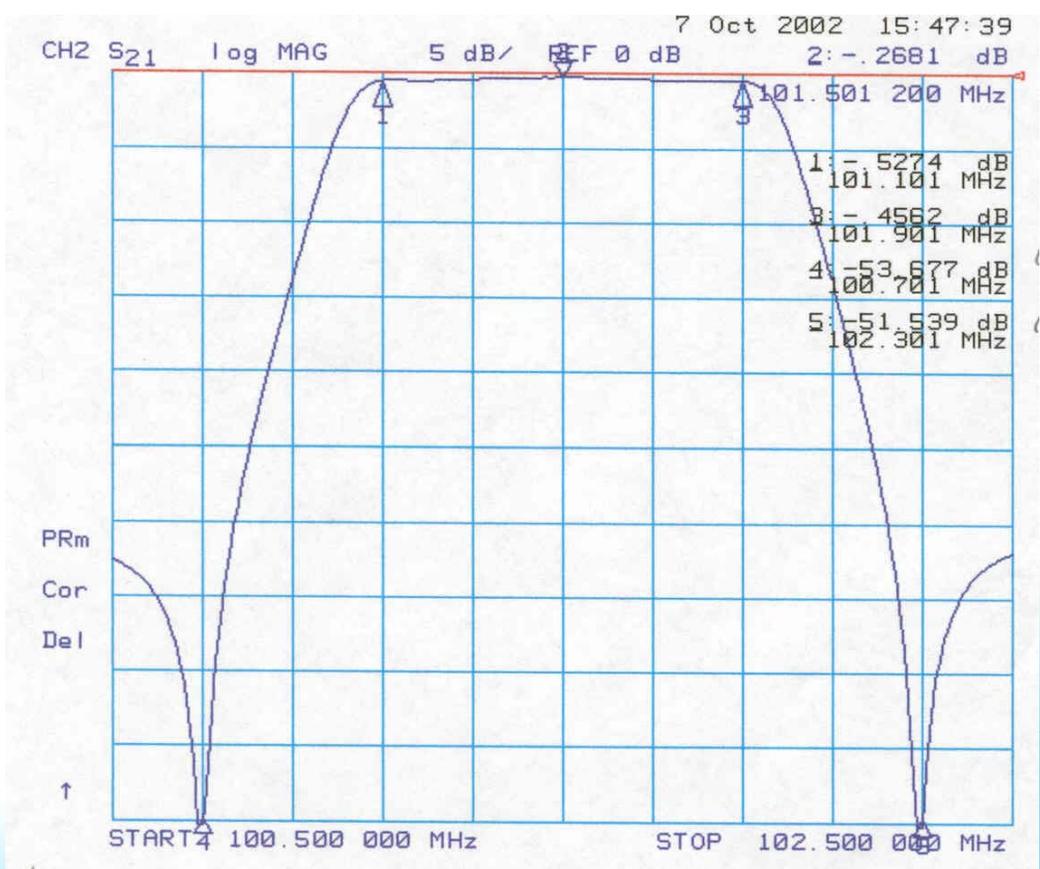
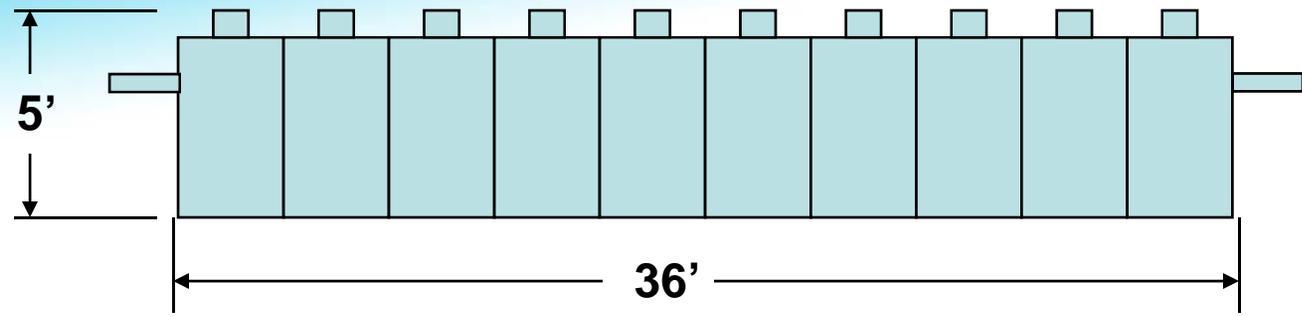
The Effect of Changing Dummy Load Impedance on Analog to Digital Isolation



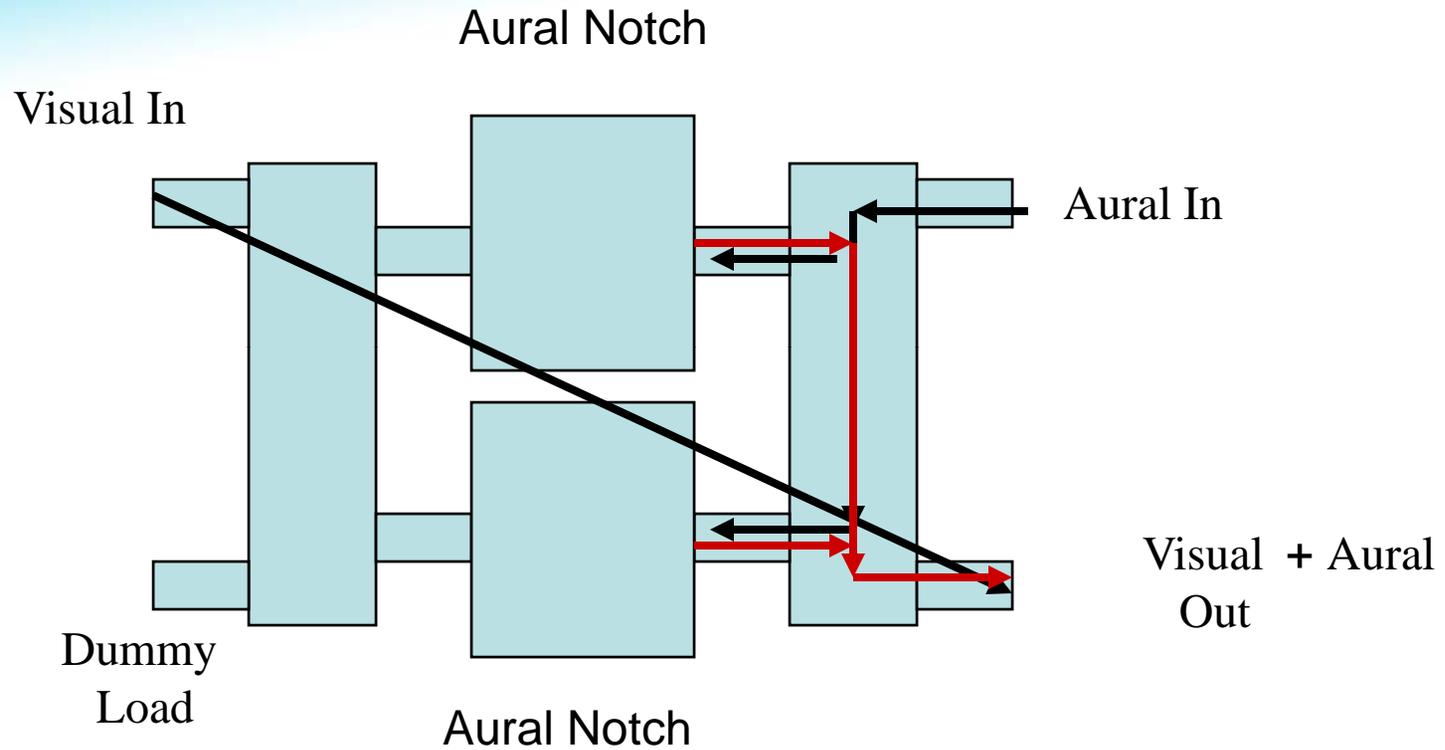
Wave Guide at FM



10 Band Pass Filters

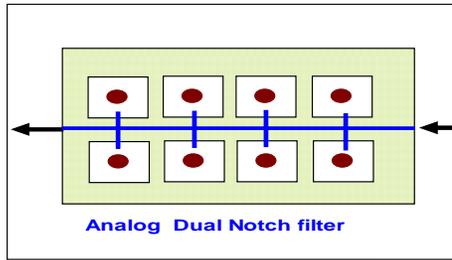
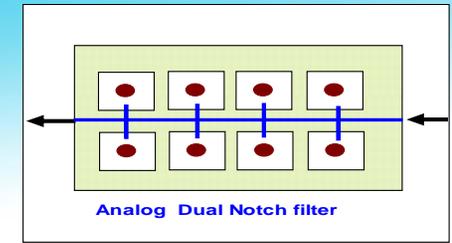


Remember the OLD days of B&W TV



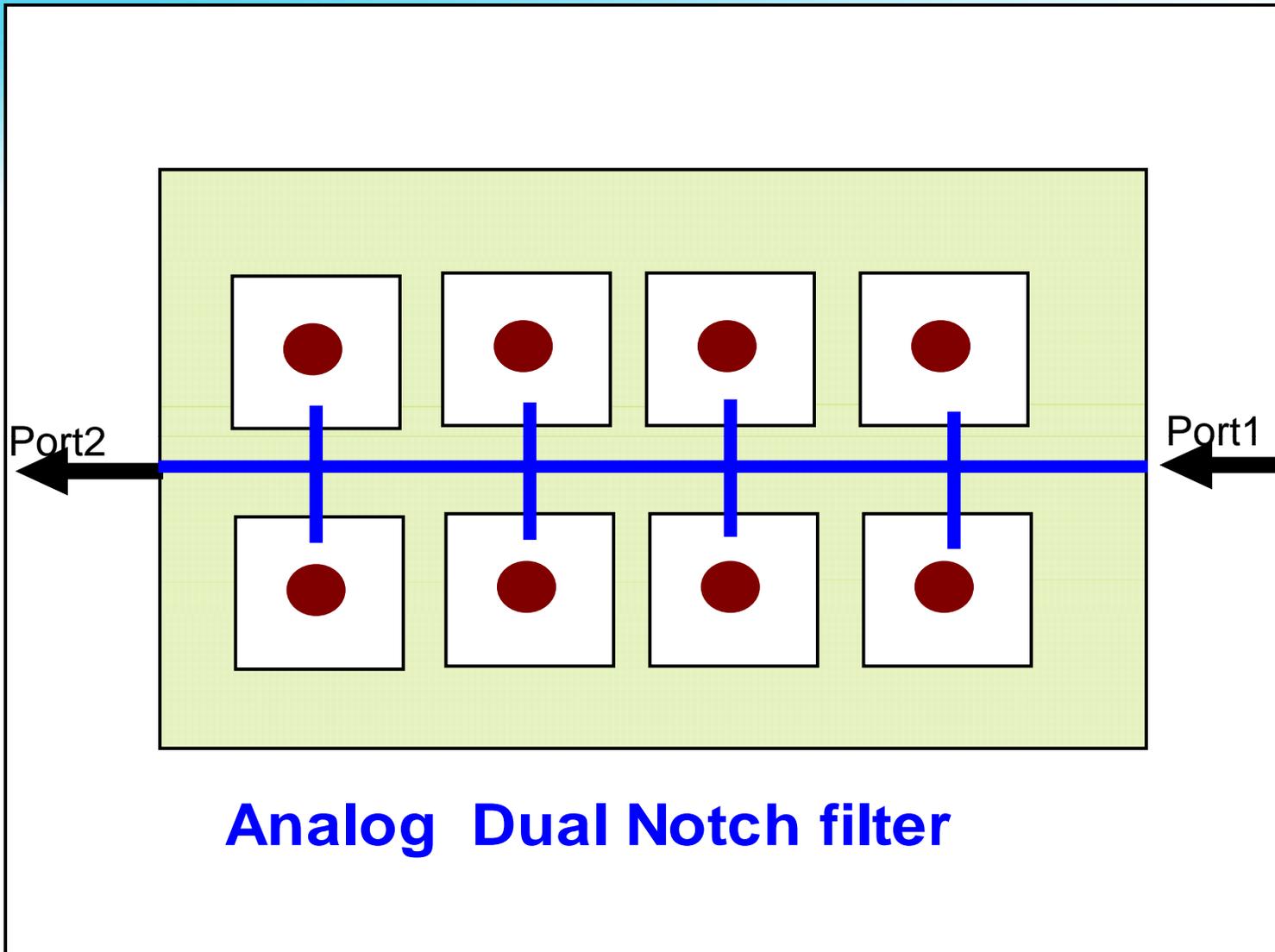
Analog In

Dummy Load

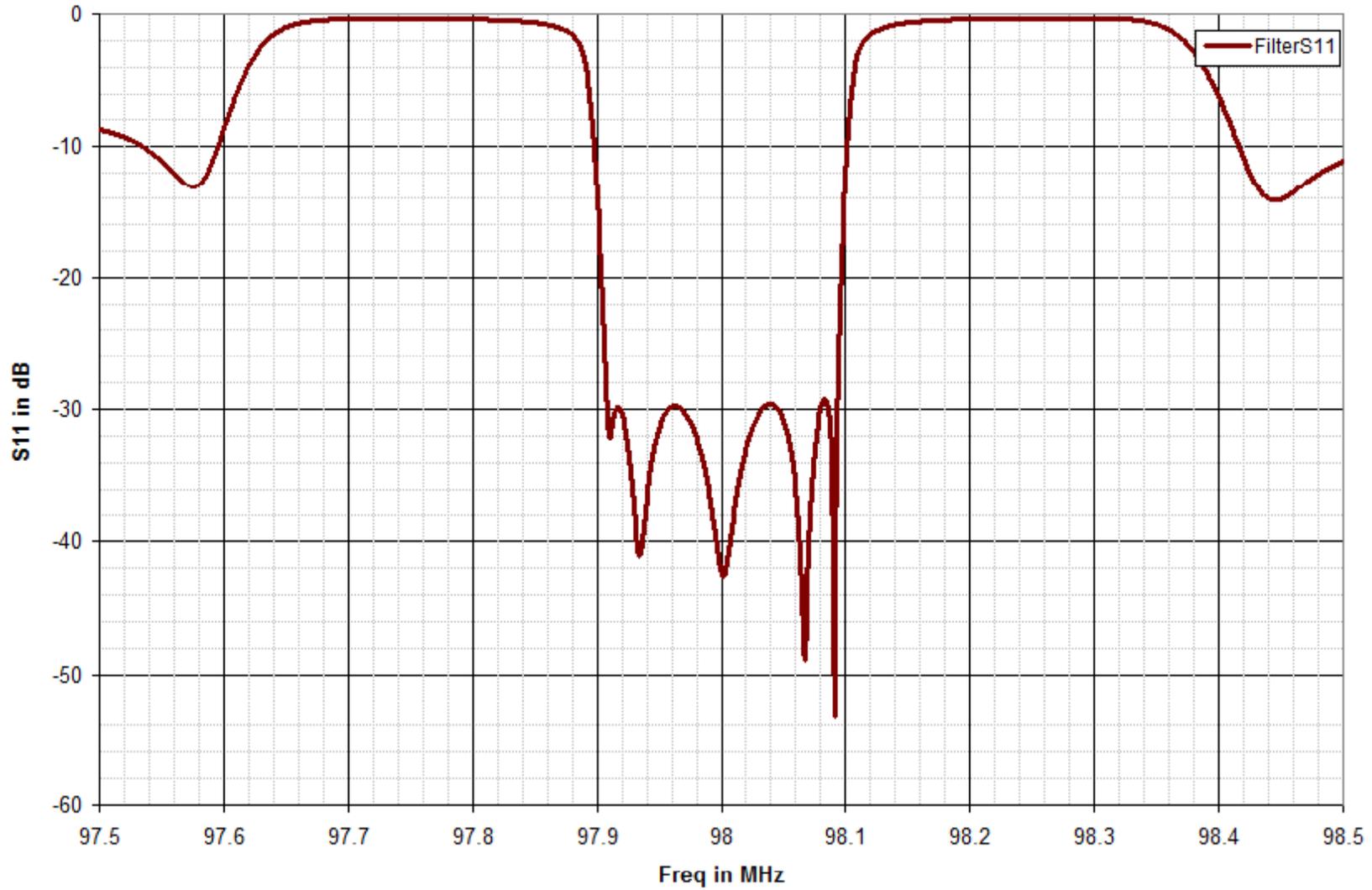


Analog + Digital Out

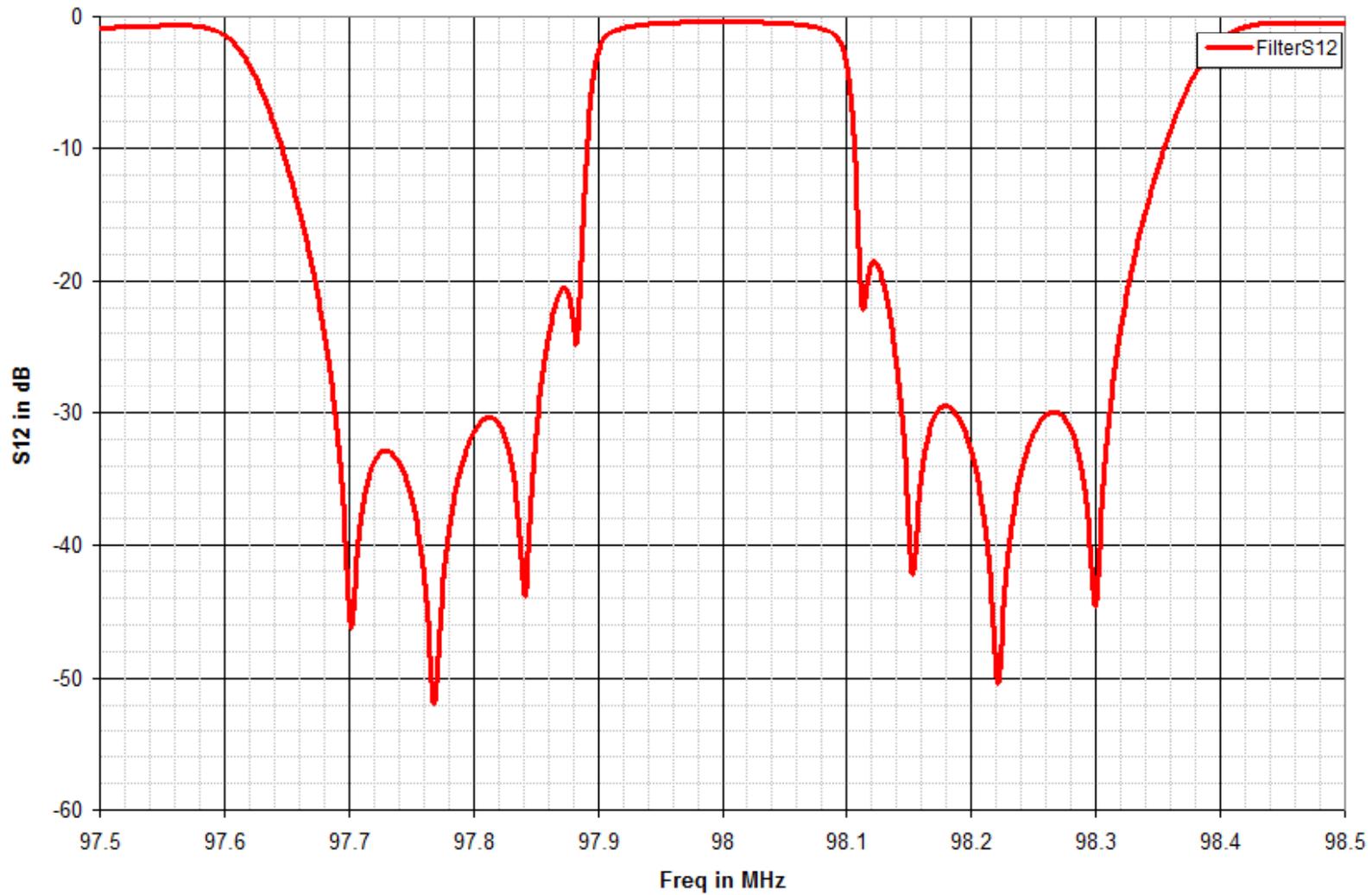
Digital In



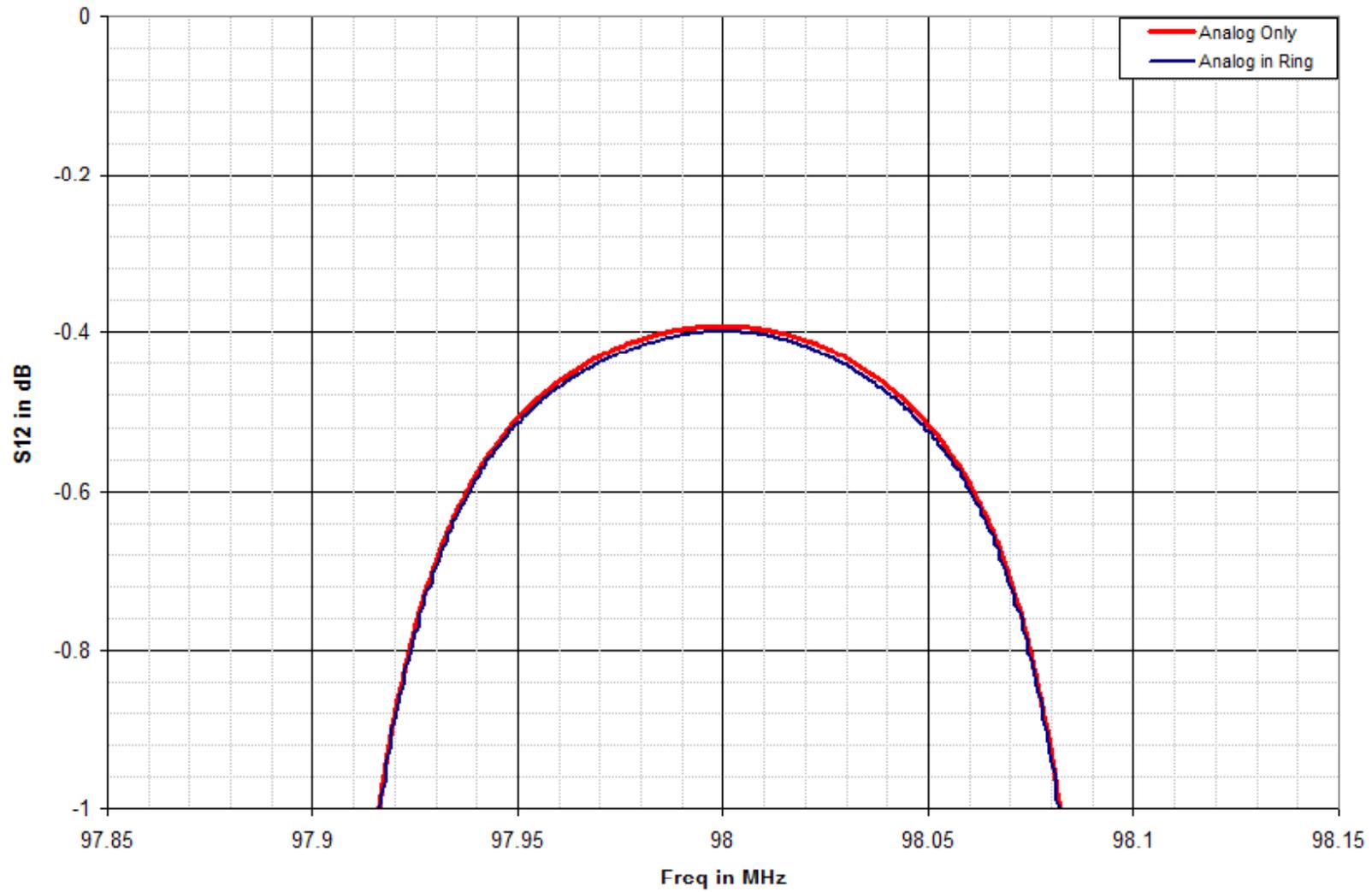
Analog Filter S11

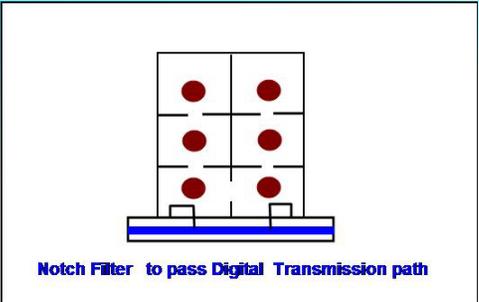


Analog Filter S12

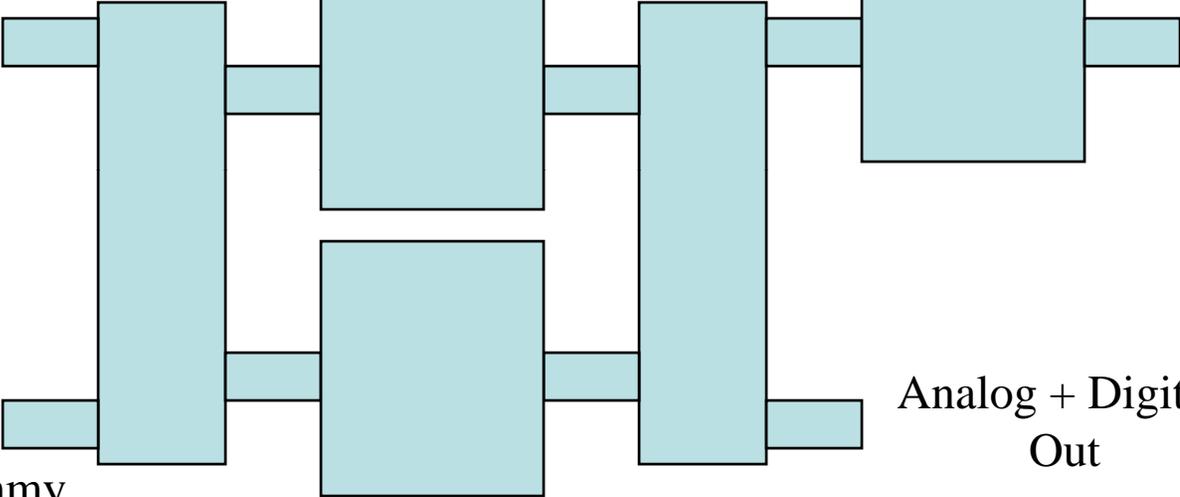


Analog Filter S12



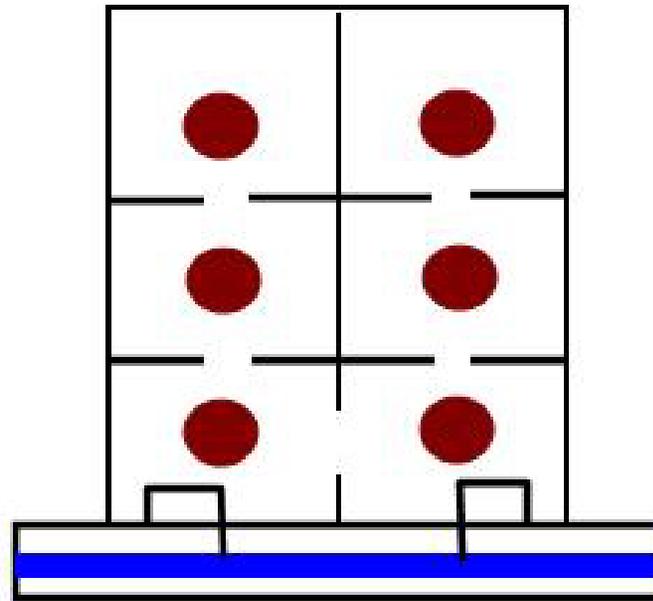


Analog In



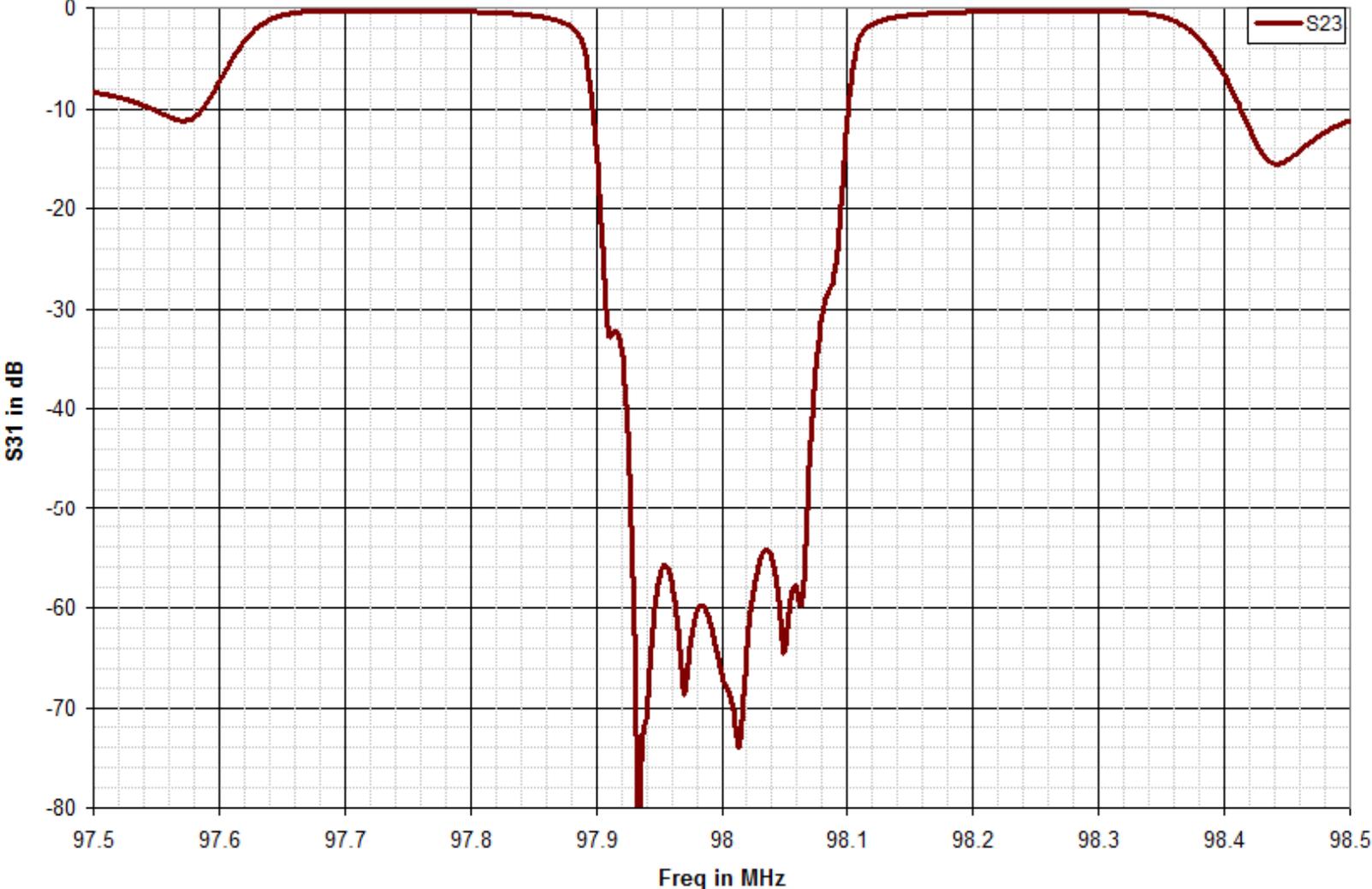
Digital In

Analog + Digital
Out

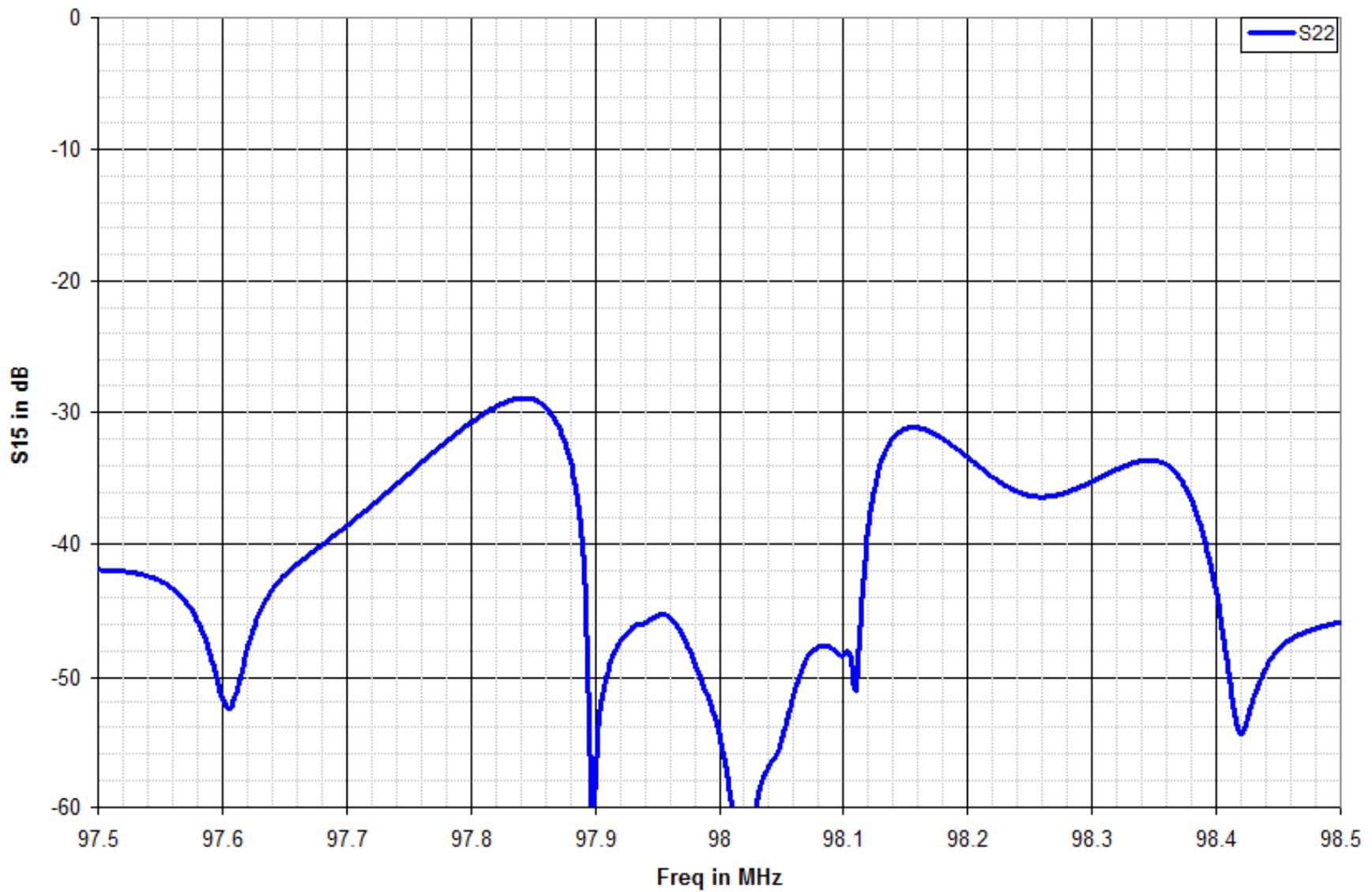


Notch Filter to pass Digital Transmission path

Hybrid Ring Module S23



Hybrid Ring Module S22

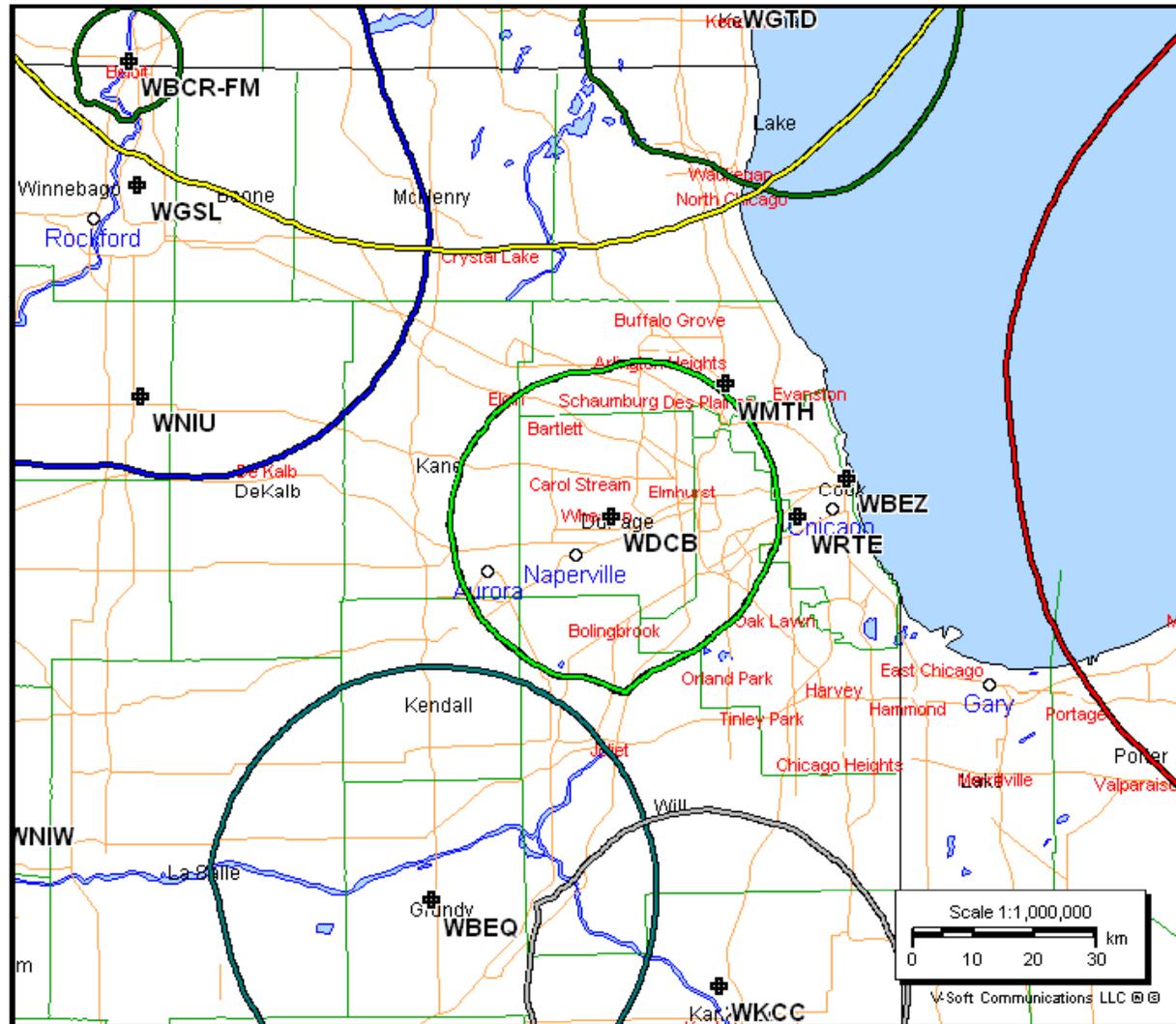


- Q factor in analog notch filter is 18000 (equivalent to big monster filter)
- Q factor in digital filter is 18000
- 0.05 dB loss is added to analog filter as margin
- 0.4 dB at mid-band and 0.625 dB at +/-75 KHz away from band edge for analog filter
- 0.25 dB @ 98.18 MHz (USB) and 97.83MHz (LSB)
- 0.25 dB @ 98.18 MHz (USB) and 97.83MHz (LSB)
- In Hybrid ring the LSB and USB loss increased to 0.60 dB (0.25 dB LSB and USB alone)

DRCIA Project

- Comprehensive study of FM Broadcasting
 - IBOC (“HD Radio”) coverage
 - Evaluate consumer digital receivers
 - Develop and validate a prediction model
 - Analog FM coverage
 - Measure consumer analog receivers
 - Develop and validate a prediction model
 - IBOC-Analog FM compatibility
- Compare IBOC and analog coverage
 - Document service in maps and population
 - Consider techniques to equalize service

WDCB F(50,50) 60 dBu Contour and First-Adjacent Neighbors F(50,10) 54 dBu



Final Questions

HD Radio



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